EWP EQIP

Emergency Watershed Protection (EWP) & Environmental Quality Incentives Program (EQIP) in Montana

Avoiding the Disaster After the Disaster

USDA NRCS
Natural Resources Conservation Service

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Situation

The summer of 2000 will be remembered for the fires that burned 884,666 acres across Montana. To put this into perspective, 884,666 acres is one percent of Montana's total acreage and larger than the state of Rhode Island.

The fires ranged from small, easily extinguishable grass fires to uncontrollable wildfires. In total there were approximately 76 fires that burned 100 or more acres. In fact, the largest fire in the state was the Valley Complex fire that burned 212,030 acres in the Bitterroot Valley. These fires flared up as early as May and were still smoldering into the fall. As a result of the damage caused by fires and a request from Montana Governor Marc Racicot, 29 Montana counties received Presidential Declared Disaster Area status from President Bill Clinton on August 30, 2000.

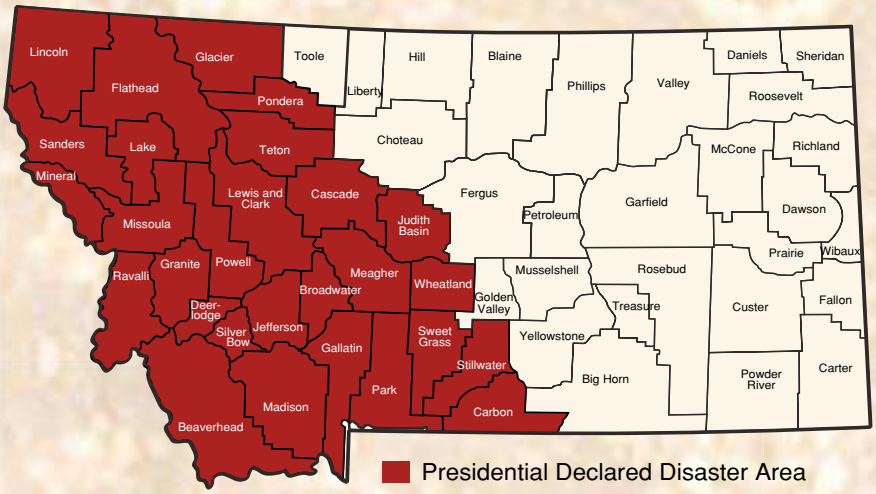
The drought that parched the state served to fuel the flames. The USDA Natural Resources Conservation Service (NRCS) SNOTEL network reported that on June 1, 2000, statewide mountain snow water content was 56 percent of average and 40 percent of 1999 levels. Streamflow forecasts for the state were also below average, ranging from 60 to 77 percent of average.

Precipitation levels, measured at precipitation stations situated all across the state, ranged from 132 percent of average at the Conrad Airport to 44 percent of average in Boulder and in Del Bonita. However, overall moisture received in Montana was 82 percent of average and 81 percent of last year for precipitation recorded at 195 stations. All of these measurements were taken from October 1999 to August 2000. These conditions caused U.S. Secretary of Agriculture Dan Glickman to approve a statewide disaster declaration for Montana on September 18, 2000 because of drought.

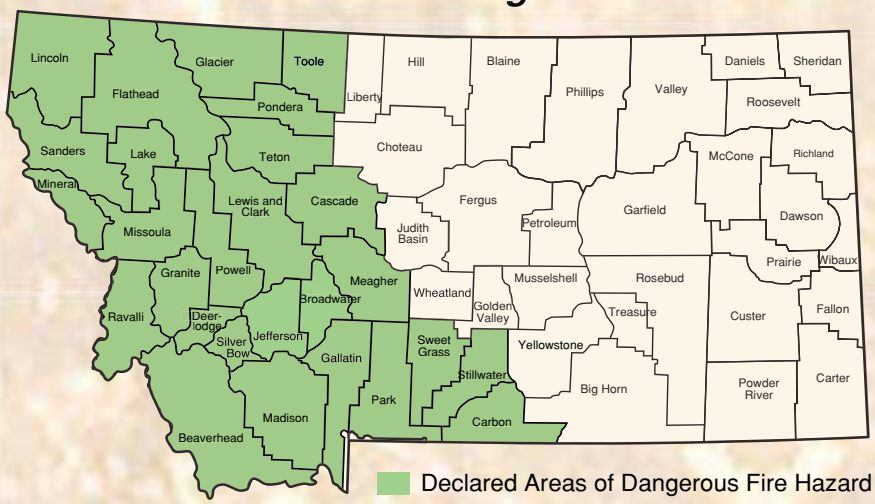
The threat of additional wildfires was so great that, ultimately, Governor Racicot declared a state of disaster in 27 western Montana counties on August 24 in an effort to prevent further flare-ups. The executive

Smoke rises from the Valley Complex fires east of Darby on August 6,2000.

2000 Presidential Declared Disaster Area



2000 Declared Areas of Dangerous Fire Hazard



Above: Firefighters observe flames burning behind the Sula ranger station.

Below left: Leafy spurge has invaded some areas burned in the Bucksnort fire on Canyon Ferry Lake.

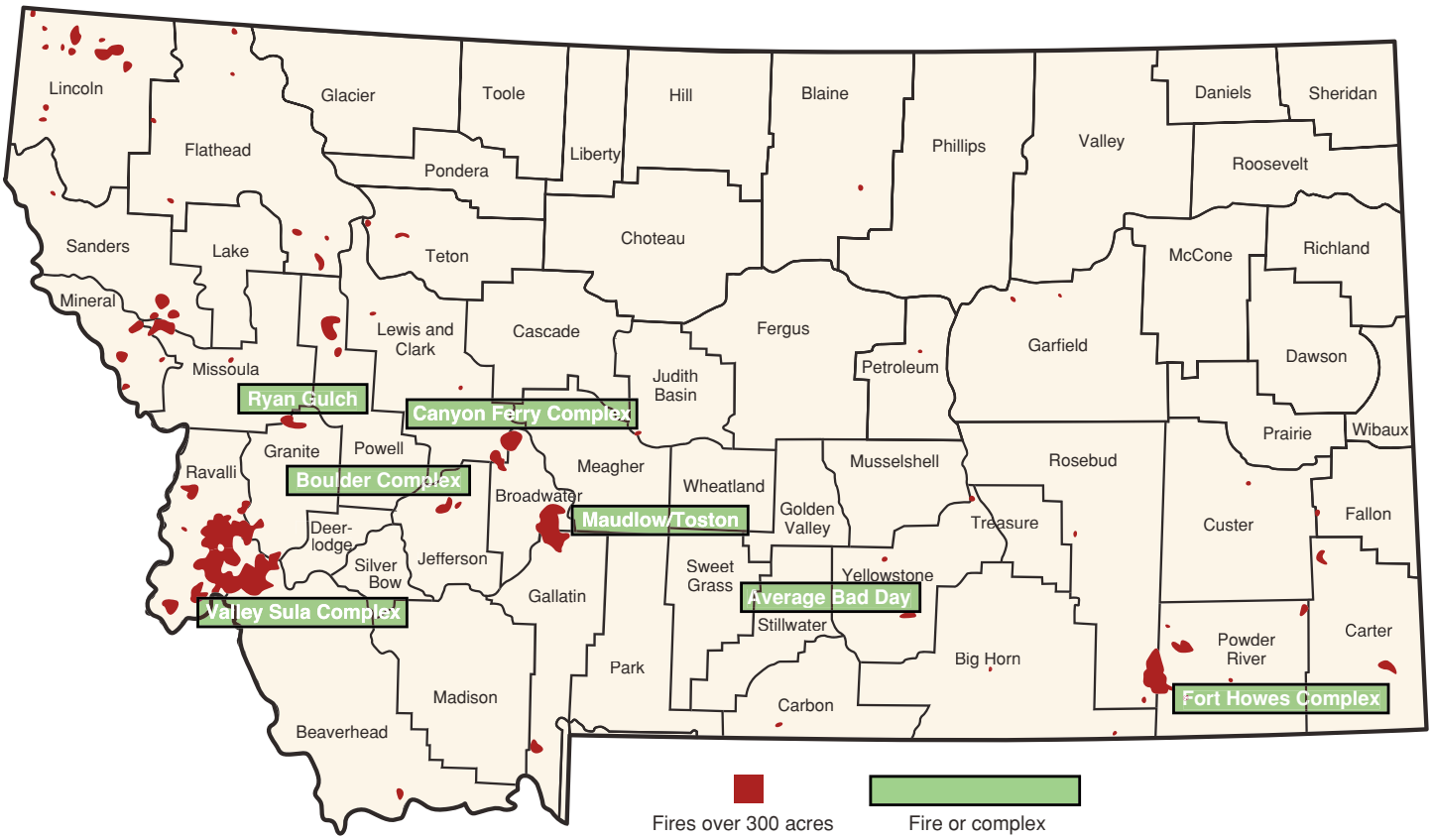
Below right: A storm in September of 2000 caused debris flows in the Bitterroot Valley. This flow moved across Highway 93 and stopped traffic.

order brought all public and private forestland and rangeland under a Level V fire restriction, which prohibited public access to these areas. Public lands affected by the closure amounted to 20 million acres. Montana's remaining 29 counties, generally the eastern portion of the state, were under Level III fire-danger restrictions. This Level III restriction allowed public use of the lands, but required control of campfires, smoking, off road vehicles, blasting, welding, and logging operations.

The Presidential Declared Disaster Area due to fire and the disaster declaration due to drought both provided a means to access additional federal funds. These funds were used to continue battling fires or to provide some financial relief to those agriculturalists affected by drought.

In September 2000, with bills still coming in, the Forest Service estimated that the cost of fighting Montana's wildfires to all agencies was approximately $22.5 million. The costs to Montana's business and landowners during the fire were estimated at $3 million per day in damages and lost revenues. The NRCS has been helping landowners to protect their property against further, crippling costs that may be incurred due to the erosion and weed invasion that follows such devastating fires.

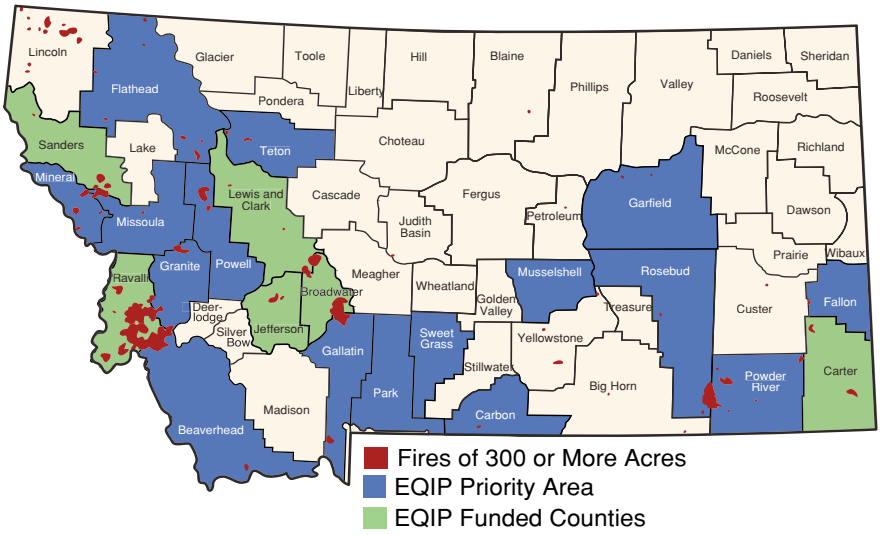
Montana Fire Season 2000



Response

Environmental Quality Incentives Program

EQIP Priority Area 2000



The NRCS designated private lands in 22 Montana counties burned by the summer of 2000 wildfires as a priority area under the Environmental Quality Incentives Program. As a result, landowners in these areas have greater access to funding dollars. In Montana, the NRCS has contracted with private landowners to complete EQIP conservation projects valued at $402,377. The EQIP priority area is called the "Montana Wildfire Burn Area." From these counties, 25 individuals applied for EQIP monies and 24 applications were approved. This funding went to landowners in 6 counties in the Montana Wildfire Burn Area.

Nearly one-fourth of the contracted funds were used for deferred grazing purposes. Fire damage in central and eastern Montana decimated forage and disturbed grazing systems. To combat this problem, EQIP helped to compensate landowners for the cost of leasing pasture and shipping cattle to pasture in return for a 2-year recovery period for damaged range. A payment of $5 per acre per year for 2 years totaled $145,095 for 18,460 acres contracted for deferred grazing.

In addition to deferred grazing, funds for stock tanks, pipeline, and fencing were important components of the support system provided by EQIP. In the forested areas of western Montana conservation practices addressed erosion rather than livestock. Directional tree felling, critical area plantings, and check dams were all used to stop soil from moving down the slopes of the Rocky Mountains.

Emergency Watershed Protection

Neal Svendsen, NRCS resource soil scientist, surveys damage on slopes of the Lower East Fork, Valley Complex.

In the fall and spring following the fires, private landowners completed conservation projects, with NRCS assistance, through the Emergency Watershed Protection (EWP) program. The EWP program is designed to help prevent damage to watersheds or to protect life and property in emergency situations after a natural disaster. In light of this, the projects implemented on burned lands were erosion control measures intended to stop or re-direct debris flows in order to protect channels, roads, structures, ponds, and slopes.

When safe to enter burned areas, NRCS employees began the EWP process by evaluating the extent of damage done to watersheds. Damage assessments were completed on at least 30 different fires and fire complexes in Montana. Not only was the property owner's land evaluated, but the situation upstream was also taken into consideration since the condition of the land upstream could impact the control measures needed downstream in the case of heavy erosion or sedimentation throughout the entire watershed.

The NRCS provided financial assistance covering up to 75 percent of construction costs on eligible conservation projects. Local sponsors provided the other 25 percent. In Montana, the total EWP expenditures were approximately $630,000.

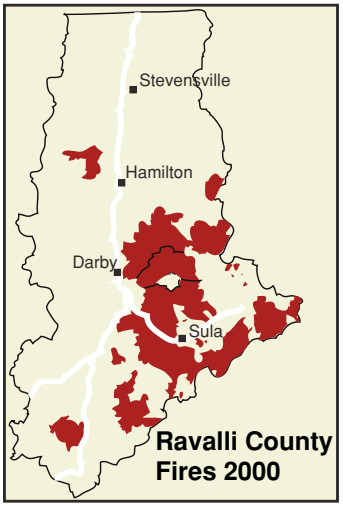
Geoff Cerrelli, NRCS civil engineer, tests the hydrophobicity of soil affected by fire.

Emergency Watershed Protection Projects

Left: NRCS engineers suggested appropriate erosion control practices for each situation. Here straw wattles were used to stabilize slopes.

Right: A concrete barrier and rock-lined channel, funded through EWP, were used to protect the Roberts' home on Dickson Creek. In total, EWP funds were used to build 729 feet of concrete barriers.

Bitterroot Valley Fires



Four major fire complexes burned in the Bitterroot Valley. In total, these fires blackened 372,597 acres for an estimated cost of control of $57,298,421 according to the State Emergency Coordination Center's September 11, 2000 situation report. Several of these fires flared up July 31, 2000 when a thunderstorm moved through the area. Lightning strikes ignited the dry forest, creating uncontrollable wildfires.

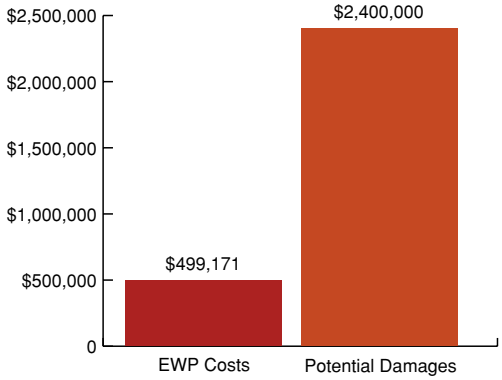
After the fires, the NRCS stepped in to offer financial and technical assistance in an effort to help landowners protect their homes and property from the effects of a barren watershed. Through the EWP program, property owners in the Bitterroot Valley received $499,171 of cost-share funds for 98 contracts to implement conservation practices that would help to prevent erosion and mudslides that could threaten homes, roads, and other property.

The largest conservation effort in the Bitterroot Valley was conducted in the final week of October 2000. Approximately 6,000 acres of severely burned private forest land was aerial seeded with 64,000 pounds of native slender wheatgrass. The purpose of the seeding was to control erosion and provide weed competition.

In addition to the NRCS and other state and federal agencies, local groups gathered to help their neighbors recover. One such organization that brought together community members was the Bitterroot Interagency/Community Recovery Team (BIRT). The goals of BIRT are to reduce flood damage potential and possible loss of life and to provide the opportunity for community members to assist in fire recovery and healing processes through rehabilitation efforts. The BIRT Team's members are the Bitterroot Resource Conservation & Development, NRCS, Bitterroot Conservation District, and the Forest Service. Many civic groups, students from area schools, and local businesses made donations of time and money.

BIRT began working in conjunction with volunteers and the Bitterroot National Forest Service on September 23, 2000. From September to November, 1,319 volunteers donated 12,386 hours of work in order to help protect 64 homes and 273 acres. Some of the work done by BIRT included seeding, mulching, constructing straw barriers, log barriers, sandbag barriers, and straw check dams, using erosion mats and straw waddles, and digging trenches.

Emergency Watershed Protection Costs vs. Cost of Potential Damages 2000



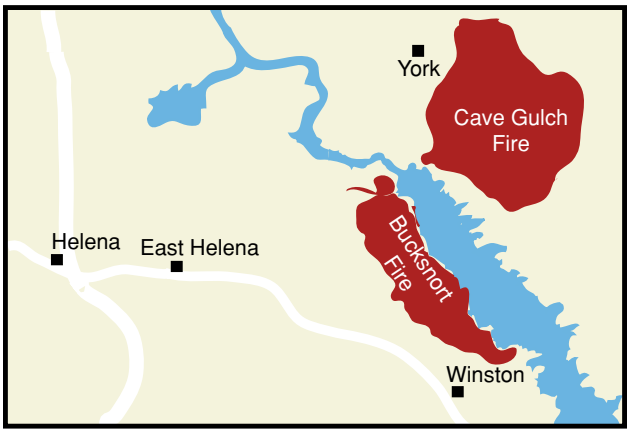
This hillside was aerial seeded in the fall of 2000 and the grasses now protect against erosion and weed invasion.

BIRT volunteers construct a straw check dam, spread straw mulch, and use erosion mats to protect this drainage.

Left: The helicopter used to seed areas of the Bucksnort fire lifts the seed hopper after refueling.

Right: Native slender and thickspike wheatgrass seeded in severely burned areas in February of 2001, using EWP funds, has sprouted.

Bucksnort Fire



The Cave Gulch and Bucksnort fires, which made up the Canyon Ferry Complex, began burning on July 23, 2000. These two fires burned approximately 43,947 acres near Canyon Ferry Lake. The fires destroyed 50 structures of which six were summer cabins, two were permanent homes, and the others were various sheds and outbuildings. The State Emergency Coordination Center estimated the cost of containment to be near $12,043,000.

The Bucksnort fire alone burned about 15,000 acres, of which over 10,000 acres were privately owned. NRCS specialists began working to map fire intensity in late July, determining that approximately one-third of the 10,000 acres were a Fire Intensity Level I (high intensity).

Some indications of Level I fire intensity are that the duff is consumed, no shrub stumps or small fuels remain, and the soil is medium to highly hydrophobic with a uniformly gray or white ash surface layer. The effects of an Intensity Level I fire are that revegetation is set back 5-10 years and the soil erosion potential is significantly increased because of reduced soil productivity and the fact that only roots and rhizomes in deep soil will resprout.

Sedimentation calculations were also conducted for the burned area by the Helena NRCS Field Office. Sediment delivery was calculated to be 2.1 tons per acre per year. Erosion rates were calculated using the Universal Soil Loss Equation (USLE). The average calculated rate was about 20 tons per acre per year.

To control the erosion predicted to occur, 3,820 acres of private property were aerial seeded with 37,000 pounds of wheatgrass in late February, 2001. EWP funds were used to pay for the seed and the helicopter needed to spread the seed. A mix of thickspike wheatgrass and slender wheatgrass was used because these wheatgrasses establish quickly and will provide quick cover for erosion control and weed competition. However, they also die out quickly, allowing native species to establish without competition from introduced species.

In addition to the seeding, workshops were held to inform landowners of assistance opportunities and to educate individuals about activities that could help mitigate the fire effects and protect valuable soil resources.

Left: The Youth Conservation Corp of Lewis and Clark County helped to construct erosion control measures. Contour tree felling was combined with seeding to stabilize slopes.

Right: NRCS engineers designed practices to control sediment movement in drainages at high risk for erosion.

Working Together

NRCS teamed up with the Bitterroot Conservation District to increase efficiency in contracting with and distributing emergency funds to private property owners. The partnership required NRCS employees to plan for protective measures, the Bitterroot Conservation District to complete contracts with the landowners, and the landowner to complete the work.

All of these erosion control measures were tested throughout the fall of 2000 and summer of 2001. Significant damage was prevented by the erosion control measures even though July rainstorms exceeded design expectations. In one July storm, one-half inch to one inch of precipitation fell in less than one hour.

Bob Nelson lost his house in the Valley Complex fires. As the Conservation District Board Supervisor, he is now helping his neighbors protect their property from damage.

"In the position I'm in, seeing how it is to get funding, I'm real happy about how much assistance we've gotten from the NRCS EWP program. The amount of work that has been done and how quickly it was done was just amazing."

Bob Nelson, Bitterroot Conservation District Board Supervisor and homeowner, Dickson Creek

"It makes the fires and mudslides easier to take if someone comes out to help you. It isn't quite as overwhelming when you've got someone telling you you're doing things right and letting you know what might happen."

Ed Lesky, homeowner, North Fork of Rye Creek

The barrier protecting Ed Lesky's home was enginered by the NRCS.

Watermarks are visible on the buildings from flows that occurred in July 2001.

"I didn't believe anyone when they said I needed all of these things. I didn't want the barriers or other things here because my yard was so nice. I threatened to take it all out, but I'm not going to do it now."

Myra Townsend, homeowner, Franklin Gulch

"I really enjoyed working with the NRCS. They told us the best way to build the log barrier and they kept in touch after that to make sure everything was still going well. I can't imagine if that wall hadn't been there when the thunderstorms hit."

Ruby Pennock, homeowner, Beam Creek

This barrier diverted flows away from Ruby Pennock's home and another home on the site.

"Everyone really cares — BIRT, NRCS, and the Fire Recovery Team. I was so glad they came to help us after the fire. I actually wanted to take the sandbags along the creek out so that I could work on my flowers, now I am thankful that it's still here."

Sue Kormanick, homeowner, Laird Creek

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